

REMARKS

In the October 10, 2007 Office Action, claims 1-4, 6, 7, 9-16, 18, 19 and 21-26 stand rejected in view of prior art, while claims 8, 20, 27 and 28 were indicated as allowed. Applicant wishes to thank the Examiner for this indication of allowable subject matter and the thorough examination of this application. No other objections or rejections were made in the Office Action.

Status of Claims and Amendments

In response to the October 10, 2007 Office Action, Applicant has amended claims 2-4, 7, 9, 11, 14-16, 19, 21 and 23 as indicated above. Applicant also has cancelled claims 1, 6, 13, 18 and 24 by the current Amendment. Thus, claims 2-4, 7-12, 14-16, 19-23 and 25-28 are pending, with claims 2, 4, 7-9, 14, 16, 19-21, 23, 27 and 28 being the independent claims. Reexamination and reconsideration of the pending claims are respectfully requested in view of above amendments and the following comments.

Rejections - 35 U.S.C. § 103

On pages 2-10 of the Office Action, claims 1-4, 6, 7, 9-16, 18, 19 and 21-26 stand rejected under 35 U.S.C. §103(a) as follows:

Rejection (1): Claims 1-3, 5, 6, 9, 10, 13-15, 17, 18 and 21-24 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,646,411 (Hirono et al.)

Rejection (2): Claims 4, 7, 11, 12, 16, 19, 25 and 26 stand rejected under 35 U.S.C. §103(a) as being unpatentable over the Hirono et al. patent in view of U.S. Patent No. 6,422,331 (Ochiai et al.).

In response, Applicant has amended independent claims 2, 4, 7, 9, 14, 16, 19, 21 and 23, and cancelled claims 1, 6, 13, 18 and 24 as mentioned above. These rejections are respectfully traversed based on the following arguments, especially in view of the amendments to independent claims 2, 4, 7, 9, 14, 16, 19, 21 and 23.

With respect to independent claims 4, 7, 16 and 19, the Office Action now indicates that Hirono does not specifically speak of the torque values, but that it is commonly known by one having ordinary skill in the art at the time of the invention that the output torque will vary along with the output current. However, the Office Action appears to ignore the limitation of the claims, "decreasing an amplitude of an output torque variation of the motor", which is lacking from the hypothetical combination of the Hirono patent and the Ochiai et al. patent. Accordingly, withdrawal of the rejection of these independent claims is respectfully requested.

With respect to independent claim 9, the Office Action points out in the third paragraph in page 3 of the Office Action that Hirono et al. discloses suppressing rotational speed variations of the motor except when the load is smaller than a predetermined value (column 5, lines 20-27). However, in this section of the disclosure, the Hirono et al. patent refers to an action when the load is smaller than a predetermined value, and does not refer to any other action. Furthermore, the Hirono et al. patent does not disclose or suggest suppressing of rotational speed *variations* of motor. Rather, at best, the Hirono et al. patent's disclosure may indicate an art for avoiding overload condition according to values of phase current. However, the Hirono et al. patent does not indicate *suppressing of rotational speed variations of motor*. In other words, while the description on decelerating by a negative acceleration with the suppression flag set may indicate a limitation of speed, this is different from a suppression of rotational speed variations.

With respect to claims 25 and 26, the Office Action points out in paragraphs 3-5 on page 9 of the Office Action that the Ochiai et al. patent discloses controlling at least one of the voltage and current of the inverter (column 2, lines 1-20) accompanied with a decrease of an amplitude (column 3, lines 18-26) of an output torque variation of the motor. As pointed out by Applicants in the Response filed on July 18, 2007 (the second bottom paragraph in page 13), the description of column 3, lines 18-26 of the Ochiai et al. patent only explains the steps s65-s68 described in column 13, lines 12-41 in short. These steps only refer to safely ending of the control of the motor 2 by decreasing torque to zero, and do not refer to *suppressing of torque variations*. In reply to such remarks, the Office Action has stated in the outstanding Office Action that "The second argument the applicant makes is that Ochiai

does not vary the output torque” in the last paragraph in page 10. However, the Office Action ignores the word “variations”, and thus, this statement in the Office Action misunderstands the response previously filed. In other words, we have argued that ***suppression of torque variations is not conducted*** by the Ochiai et al. patent.

Also, in the second last paragraph in page 10 of the Office Action, the Office Action responds that Hirono finds an output voltage value in column 1, lines 40-58. However, such Office Action’s response does not refute our previous argument on the difference between the counter-electromotive force and the output voltage of the inverter (the last paragraph of page 12 in the previous response filed).

Even though Applicants at least disagree with the above points made in the outstanding Office Action, Applicants have further amended independent claims 2, 4, 7, 9, 14, 16, 19, 21 and 23 to even more clearly define the present invention over the prior art of record. Specifically, these independent claims now require, *inter alia*, a method/apparatus for controlling at least one of voltage and current applied to a motor, which drives a periodic load, from an inverter for varying motor output torque periodically; and suppressing periodic rotational speed variations of the motor that result from the periodic load ... Clearly this arrangement is ***not*** disclosed or suggested by the Hirono patent, the Ochiai et al. patent or any other prior art of record.

Specifically, while the Office Action points out that the Hirono et al. patent allegedly discloses suppressing of rotational speed variations of motor in column 3, lines 15-55 (the third paragraph of page 2 in the Office Action, etc.), this section of Hirono et al.’s disclosure explains about calculating of rotational velocity and acceleration based on the counter-electromotive force, detecting the phase current and accelerating/decelerating according to the phase current. In other words, this disclosure in the Hirono et al. patent does not suggest acceleration/deceleration for speed variations of the motor that results from the periodic load, as now required by the claims. Accordingly, withdrawal of these rejections of these independent claims is respectfully requested.

Moreover, claims 3, 10-12, 15, 22, 25 and 26 are now allowable since claims on which these claims depend should be allowed, as explained above.

Appl. No. 10/530,410
Amendment dated February 11, 2008
Reply to Office Action of October 10, 2007

Allowable Subject Matter

On page 10 of the Office Action, claims 8, 20, 27 and 28 were indicated as allowed. Applicant wishes to thank the Examiner for this indication of allowable subject matter and the thorough examination of this application.

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In view of the foregoing amendment and comments, Applicant respectfully asserts that claims 2-4, 7-12, 14-16, 19-23 and 25-28 are now in condition for allowance. Reexamination and reconsideration of the pending claims are respectfully requested. If there are any questions regarding this Amendment, please let us know.

Respectfully submitted,

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